CLAIMS

1. A loudspeaker comprising a panel capable of supporting bending waves and at least two exciters mounted to the panel for exciting bending waves in the panel to produce an acoustic output, each of said exciters being adapted for connection to respective independent sources of drive signals.

2. A loudspeaker according to claim 1, wherein each of said exciters is capable of generating a maximum sound pressure level, the maximum sound pressure levels being different.

3. A loudspeaker according to claim 2, wherein each of said exciters is capable of generating sound across a maximum frequency bandwidth, the maximum frequency bandwidth of one of the exciters being greater than that of the other exciter(s).

4. A loudspeaker according to claim 3, wherein a first of said exciters is mounted on said panel at a location having a higher number of vibrationally-active resonance anti-nodes than the location at which the other exciter(s) is/are mounted.

5. A loudspeaker according to claim 4, comprising first, second and third exciters, wherein said third exciter is capable of generating sound across a maximum frequency bandwidth less than that of said second exciter, said third exciter being mounted on said panel at a location having a lower number of vibrationally active resonance anti-nodes than the location at which said second exciter is mounted.

6. A loudspeaker according to claim 1, wherein each of said exciters is capable of generating sound across a maximum frequency bandwidth, the maximum frequency bandwidth of one of the exciters being greater than that of the other exciter(s).

7. A loudspeaker according to claim 6, wherein a first of said exciters is mounted on said panel at a location having a higher number of vibrationally-active resonance anti-nodes than the location at which the other exciter(s) is/are mounted.

8. A loudspeaker according to claim 7, comprising first, second and third exciters, wherein said third exciter is capable of generating sound across a maximum frequency bandwidth less than that of said second exciter, said third exciter being mounted on said panel at a location

having a lower number of vibrationally active resonance anti-nodes than the location at which said second exciter is mounted.

9. A loudspeaker according to any one of claims 1-8, adapted for installation and operation as a ceiling tile.

10. A loudspeaker system comprising a panel capable of supporting bending waves, a plural number of exciters mounted to the panel for exciting bending waves in the panel to produce an acoustic output, and the same plural number of independent sources of drive signals, each of said independent sources of drive signals being connected to respective ones of said exciters, whereby each of said exciters is separately driven.

11. A loudspeaker system according to claim 10, wherein each of said exciters is capable of generating a maximum sound pressure level, the maximum sound pressure levels being different.

12. A loudspeaker system according to claim 11, wherein each of said exciters is capable of generating sound across a maximum frequency bandwidth, the maximum frequency bandwidth of one of the exciters being greater than that of the other exciter(s).

13. A loudspeaker system according to claim 12, wherein a first of said exciters is mounted on said panel at a location having a higher number of vibrationally-active resonance anti-nodes than the location at which the other exciter(s) is/are mounted.

14. A loudspeaker system according to claim 13, comprising first, second and third exciters, wherein said third exciter is capable of generating sound across a maximum frequency bandwidth less than that of said second exciter, said third exciter being mounted on said panel at a location having a lower number of vibrationally active resonance anti-nodes than the location at which said second exciter is mounted.

15. A loudspeaker according to claim 10, wherein each of said exciters is capable of generating sound across a maximum frequency bandwidth, the maximum frequency bandwidth of one of the exciters being greater than that of the other exciter(s).

16. A loudspeaker according to claim 15, wherein a first of said exciters is mounted on said panel at a location having a higher number of vibrationally-active resonance

anti-nodes than the location at which the other exciter(s) is/are mounted.

17. A loudspeaker according to claim 16, comprising first, second and third exciters, wherein said third exciter is capable of generating sound across a maximum frequency bandwidth less than that of said second exciter, said third exciter being mounted on said panel at a location having a lower number of vibrationally active resonance anti-nodes than the location at which said second exciter is mounted.

18. A method of operating a loudspeaker having a panel capable of supporting bending waves and at least two exciters mounted to the panel for exciting bending waves in the panel to produce an acoustic output, comprising driving each of the exciters by an independent source of drive signals.

19. A method according to claim 18, wherein the loudspeaker has three exciters, one of the exciters is selectively driven such that the panel produces an alarm signal, another of the exciters is selectively driven such that the panel produces a signal conditioning signal, and the last of the exciters is selectively

driven such that the panel produces an audio signal in the form of music and/or speech.